

1. An ink melt heater for heating a solid ink stick for melting the ink stick to a liquid, the heater comprising:

a heater trace assembly including a plurality of heater traces for converting a supply of electrical energy to discharging thermal energy, the plurality of heater traces being disposed to form at least a first and a second thermal heater zones, the first thermal heater zone having a first trace configuration for regulating an ink melt rate, and the second thermal heater zone having a second trace configuration for reducing liquid phase ink viscosity; and,

a support plate adhered to the trace assembly on a first side and including an ink stick contacting surface on a second side.

2. The ink melt heater as claimed in claim 1 wherein the heater operates in a watt density ranging from at least twenty-five to fifty watts per square inch.

3. The ink melt heater as claimed in claim 1 wherein the first and second trace assemblies are connected in series and connected by a common control circuit.

4. The ink melt heater as claimed in claim 1 including a protrusion depending from the heat transfer plate disposed for engagement against the solid ink stick to form a mechanical lock of the stick to the heater.

5. The ink melt heater as claimed in claim 4 wherein the protrusion comprises a frame disposed about an end of the ink stick and fastened to the heat transfer plate.

6. An ink melt heater for heating a solid ink stick for melting the ink stick from a solid to a liquid phase wherein the heater includes a trace assembly having a plurality of power zones having different wattage densities respectively and, adhered thereto, a heat transfer plate for mating engagement against the solid ink stick, the heater having a low thermal mass for enhanced and rapid heat transfer from the trace assembly through the transfer plate to the ink stick, and a formable construction for forming the heater into a non-planar configuration with an interface

strain between the plate and trace assembly less than an amount that could damage the trace-to-plate adhesion.

7. The ink melt heater as claimed in claim 6 wherein the heater operates in a watt density ranging from at least twenty-five to fifty watts per square inch.

8. The ink melt heater as claimed in claim 6 wherein the plurality of power zones comprises a melt zone having a first trace assembly for melting the solid ink stick at a first preselected temperature, and a post melt zone having a second trace assembly for raising the first preselected temperature of the melted ink to a second preselected temperature conducive to ink run off of the heater.

9. The ink melt heater as claimed in claim 8 wherein the first and second trace assemblies are connected in series and connected by a common control circuit.

10. The ink melt heater as claimed in claim 6 including a protrusion depending from the heat transfer plate disposed for engagement against the solid ink stick to form a mechanical lock of the stick to the heater.

11. The ink melt heater as claimed in claim 10 wherein the protrusion comprises a frame disposed about an end of the ink stick and fastened to the heat transfer plate.